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FLEISCHER, MARK A				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/821,464

Applicant(s)

AMARU ET AL.

Examiner

MARK A. FLEISCHER

Art Unit

3624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-77 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-77 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of Claims

1. This action is in reply to the amendments filed on 10 March 2009.
2. Claims 1, 6, 8-10, 12-16, 18, 21, 25, 26, 29, 34, 36-38, 40-44, 46, 49, 53, 54, 57-60, 63-69, and 72-77 have been amended.
3. Claims 1-77 are currently pending and have been examined.

Response to Amendments

4. The objections to the drawings are withdrawn in light of Applicant's amended drawings.
5. The objection to the specification abstract is withdrawn in light of Applicant's amendments.
6. The objection to Claim 16 is withdrawn in light of Applicant's amendments.
7. The objections to Claim 12, 13, 40 and 41 are withdrawn in light of Applicant's amendments.
8. The rejections of Claims 1-77 based on the rejection of claims 1, 16, 21, 29, 44, 49, 57, 58 and 59 under the second paragraph of 35 U.S.C. §112 are withdrawn in light of Applicant's amendments.
9. The rejections of Claims 10, 14, 15, 18, 38, 42, 43, and 46 under the second paragraph of 35 U.S.C. §112 are withdrawn in light of Applicant's amendments.
10. The rejections of claims 1-77 under 35 U.S.C. §101 are withdrawn in light of Applicant's amendments.

Response to Arguments

11. Applicant's arguments received on 10 March 2009 have been fully considered but they are not persuasive. Referring to the previous Office action, Examiner has cited relevant portions of the references as a means to illustrate the systems as taught by the prior art. As a means of providing further clarification as to what is taught by the references used in the first Office action,

Art Unit: 3624

Examiner has expanded the teachings for comprehensibility while maintaining the same grounds of rejection of the claims, except as noted above in the section labeled "Status of Claims." This information is intended to assist in illuminating the teachings of the references while providing evidence that establishes further support for the rejections of the claims.

12. With regard to the limitations of claims 1-7, 16-22, 29-35, 44, 45, 49, 50 and 57-59, Applicant misapplies the legal standards where they state that "The Examiner bears the burden of establishing a *prima facie* case of obviousness based on the prior art when rejecting claims under 35 U.S.C. §103." Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Furthermore, the Examiner recognizes that references cannot be arbitrarily altered or modified and that there must be some reason why one skilled in the art would be motivated to make the proposed modifications. Although the motivation or suggestion to make modifications must be articulated, it is respectfully submitted that there is no requirement that the motivation to make modifications must be expressly articulated within the references themselves. References are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures, *In re Bozek*, 163 USPQ 545 (CCPA 1969). The issue of obviousness is not determined by what the references expressly state but by what they would reasonably suggest to one of ordinary skill in the art, as supported by decisions in *In re Delisle* 406 Fed 1326, 160 USPQ 806; *In re Kell, Terry and Davies* 208 USPQ 871; and *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ 2d 1596, 1598 (Fed. Cir. 1988) (citing *In re Lalu*, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1988)). Further, it was determined in *In re Lamberti et al* 192 USPQ 278 (CCPA) that:

- (i) obvious does not require absolute predictability;

(ii) non-preferred embodiments of prior art must also be considered; and

(iii) the question is not express teaching of references but what they would suggest.

According to *In re Jacoby*, 135 USPQ 317 (CCPA 1962), the skilled artisan is presumed to know something more about the art than only what is disclosed in the applied references. Within *In re Bode*, 193 USPQ 12 (CCPA 1977), every reference relies to some extent on knowledge of persons skilled in the art to complement that which is disclosed therein. In *In re Conrad* 169 USPQ 170 (CCPA), obviousness is not based on express suggestions, but what references taken collectively would suggest.

In the instant case, the Examiner respectfully notes that each and every motivation to combine the applied references is accompanied by select portions of the respective references which specifically support that particular motivation. As such, it is NOT seen that the Examiner's combination of references is unsupported by the applied prior art of record. Rather, it is respectfully submitted that explanation based on the logic and scientific reasoning of one ordinarily skilled in the art at the time of the invention that support a holding of obviousness has been adequately provided by the motivations and reasons indicated by the Examiner, *Ex pane Levengood* 28 USPQ 2d 1300 (Bd. Pat. App. & Inter., 4/22/93).

Applicant states that Wachtel "makes no reference to a number of semantic construct required to represent mappings between the data from the data provider and the intelligent data assimilation system ontology." (Remarks, p.26). However, Wachtel [11,27] which states "A search configuration includes: an identification of the data provider, a mapping of results data fields to the ontology of atomic objects known to the intelligent data assimilation system, and a mapping of the request data fields to the ontology of atomic objects known to the data provider." (emphasis added) where the 'atomic objects' corresponds to the above claimed constructs.

Applicant argues that the cited prior art do not teach "using the calculated metric of complexity" (Remarks, p.28), but Examiner cites new art, specifically Smith as shown below that teaches such complexity metrics.

Art Unit: 3624

Applicant's attempt to traverse the Official Notices that

- it is old and well-known as well as common place in the business management arts that licensing fees are typically based on the expected value-added to the licensee. Moreover, any entity that sought to determine licensure valuation would of necessity seek to determine the valuation of such information assets,
- that it is old and well-known as well as common place in the information systems arts to use the number of constructs to assess the complexity or value of an information system.

Examiner notes the following discussion of Official Notice taken from the MPEP:

To adequately traverse such a finding, an applicant must specifically point out the supposed errors in the examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art. See 37 CFR 1.111(b). See also *Chevenard*, 139 F.2d at 713, 60 USPQ at 241 ("[I]n the absence of any demand by appellant for the examiner to produce authority for his statement, we will not consider this contention."). A general allegation that the claims define a patentable invention without any reference to the examiner's assertion of official notice would be inadequate. If applicant adequately traverses the examiner's assertion of official notice, the examiner must provide documentary evidence in the next Office action if the rejection is to be maintained. See 37 CFR 1.104(c)(2). See also *Zurko*, 258 F.3d at 1386, 59 USPQ2d at 1697 ("[T]he Board [or examiner] must point to some concrete evidence in the record in support of these findings" to satisfy the substantial evidence test). If the examiner is relying on personal knowledge to support the finding of what is known in the art, the examiner must provide an affidavit or declaration setting forth specific factual statements and explanation to support the finding. See 37 CFR 1.104(d)(2). If applicant does not traverse the examiner's assertion of official notice or applicant's traverse is not adequate, the examiner should clearly indicate in the next Office action that the common knowledge or well-known in the art statement is taken to be admitted prior art because applicant either failed to traverse the examiner's assertion of official notice or that the traverse was inadequate. If the traverse was inadequate, the examiner should include an explanation as to why it was inadequate. (MPEP § 2144.03(C))

Applicant has not "specifically point[ed] out the supposed errors in the examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art." Merely stating that the Applicant traverses the Official Notice does not amount to a sufficient traversal. In the interests of furthering prosecution however, Examiner notes two references that establish examples of the above Official Notices.

Examiner notes that Applicant's statements that the claimed invention can overcome "problems associated with the prior art in determining a price for licensing software" (Remarks, p.10) wherein the complexity metric and ontology mappings are used to establish such metrics are obscured by the lengthy and 'complex' claim language. Examiner therefore encourages Applicant to arrange for a telephonic interview to further address these issues.

With regard to the limitations of claims 8-15,18-20, 23, 24, 36-43, 46-48, 51 and 52, Applicant acknowledges that "[e]ven though Wachtel may teach SQL queries, Wachtel does not teach or suggest that the intelligent data assimilation system generates the SQL queries for data query tasks." (Remarks, p.11). Examiner respectfully disagrees. Aside from the rather obvious tautological aspects of the Applicant's remarks (that SQL queries are *ipso facto* used for data query tasks), Examiner notes the definition of SQL: "SQL is a querying language for querying and modifying data and managing databases." (Wikipedia). Thus, the logical implications for what SQL queries are used for in conjunction with the above definition and common meaning of the term SQL establish and support the Examiner's **Official Notice**. Applicant's note however that such queries and data query tasks were used to overcome "problems associated with the prior art in determining a price for licensing software" (Remarks, p.31). This does not however derogate from the thrust of the Official Notice itself nor with the motivation to combine those aspects of SQL with the notions of measuring complexity and such. Similarly for the arguments pertaining to the use of XML and XSLT scripts. Such technologies existed at the time and their use in the context of the valuation of software or data processing services would have been obvious because of the thrust and direction of how these technologies were being applied and the current efforts to establish measures for the valuation of software and software services. Again, Applicant has not pointed out the specific deficiencies of the Official Notices themselves, but merely expands upon what they do not teach while ignoring the motivations to combine what they do teach with the other various teachings. Moreover, such technologies and uses were old and well-known at the time of the invention as demonstrated in Wachtel in at least [2,31] and Eder [0081, Table 15] among others.

Examiner notes with appreciation the nature of the invention and further suggests that exhausting the many possible permutations associated with the various limitations and claims can render the claims

Art Unit: 3624

more amenable to obviousness type rejections. Again, Examiner encourages Applicant to schedule a phone interview to further discuss and possibly amend the claims to provide a more cogent description of the invention.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1, 21, 29, 49, 57, 58 and 59 are rejected under 35 U.S.C. §103(a) as being unpatentable over Halbout, et al. (US 6978257 B1) in view of Wachtel (US 6847974 B2) in view of Ruiz, et al. (*A proposal of a Software Measurement Ontology*) and further in view of Smith, et al. (US 6651244 B1).

Claims 1, 16, 21, 29, 44, 49, 57, 58 and 59:

Although claims 1, 16, 21, 29, 44, 49, 57, 58 and 59 are worded and/or structured slightly differently, they have the same scope and so are addressed together. Halbout teaches the following limitations as shown.

- *A method, implemented in a data processing system, for determining complexity of an enterprise information resource management system* (Halbout [abstract] describes and/or discloses methods for accounting for system and application complexity. Halbout [6,14] describes "the amount and type of information or service.),
- *(a transaction processing system for receiving the metric M and) inputting by the processor device the calculated metric of complexity into a transaction processing system, wherein the transaction processing system determines a price for a licensing transaction for the enterprise*

information resource management system using the calculated metric of complexity; (Halbout [1,9] teaches methods to value the outsourcing of services.)

Halbout does not specifically teach the following limitations, but Wachtel, as shown, does.

- *the enterprise information resource management system being used to contain an ontology model into which a plurality of enterprise data assets are mapped, the ontology model including a plurality of model constructs, the enterprise data assets including a plurality of assets constructs, and the mappings between the enterprise data assets and the ontology model including a plurality of mapping constructs* (Wachtel in at least [3,53] teaches use of information systems containing a number of ontological constructs, and in [6,28] describes methods for mapping of data into an assimilation system ontology. See also Wachtel [11,27] which states "A search configuration includes: an identification of the data provider, a mapping of results data fields to the ontology of atomic objects known to the intelligent data assimilation system, and a mapping of the request data fields to the ontology of atomic objects known to the data provider." (emphasis added) where the 'atomic objects' corresponds to the above claimed constructs.) *the method comprising:*
- *(an input device for) receiving* (Wachtel [1,18] describes servers that receive requests from clients.) *by a processor device in the data processing system a quantity equal to a number of asset constructs, required to represent the enterprise data assets, a quantity equal to a number of mapping constructs required to represent the mappings between the enterprise data assets and the ontology model, and a quantity equal to a number of model constructs required to generate the ontology model from an input device* (Wachtel [3,53] refers to ontological relationships between semantic constructs and in [abstract] also refers to various "structures" which also corresponds to *constructs* and Wachtel [9,5] refers to a "model" and in [12, 20] refers to a plurality of models. Finally, Wachtel [6,27] refers to "an ontology designer" that encompasses methods to map data, hence corresponds to a number of mapping constructs. Wachtel also describes objects which corresponds to *constructs* and generally describes how these objects and constructs are connected and linked.);

- *outputting by the processor device the calculated metric of complexity on an output device*
(Wachtel [15,39] describes "the resulting output" hence performs some 'outputting...').

Neither Halbout nor Wachtel specifically teach that the outputting is of the calculated complexity metric, but Smith, in an analogous art does. Smith [1,51] states "Other complexity measurements include the amount of data used, the number of variables used in a the number of nesting levels in control constructs, the number of lines of code, the number of lines between successive references to variables, and the number of input and output values." (emphasis added). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the methods for accounting system complexity of Halbout with the ontological mapping methods of Wachtel and the complexity metrics of Smith to assess the complexity of software and information systems because it provides useful information on the scalability of system elements and objects and thereby provides some measure of the complexity of the system and the technical capability existed at the time of the invention to combine these aspects and the result of the combination was predictable.

Neither Halbout nor Wachtel specifically teach the following limitations, but Ruiz as shown does.

(a processor coupled to said input device, the processor for) calculating by the processor device a metric of complexity, for the enterprise information resource management system having a maximum capacity corresponding to a sum of the quantity of asset constructs, the quantity of mapping constructs, and the quantity of model constructs, wherein the metric of complexity is calculated based on a function value of the quantity of asset constructs, the quantity of mapping constructs, and the quantity of model constructs and specified additional parameters (Ruiz, in at least p.2 teaches use of metrics for software measurement ontologies and associates them with number of lines of source code and related elements and on p. 6 also to "size" as it is related to software complexity and on p.9 describes a formula for obtaining the value of the metric.)

While Halbout, Wachtel or Smith or Ruiz do not teach methods for software licensing *per se*, or that the complexity metric is based on the number of constructs, it is obvious to use the valuation methods described therein for purposes of price-setting in licensing matters. Examiner takes **Official Notice** that it is old and well-known as well as common place in the business management arts that licensing fees

are typically based on the expected value-added to the licensee. Moreover, any entity that sought to determine licensure valuation would of necessity seek to determine the valuation of such information assets. See for example Van Wegen [p.247, col.1]. Examiner takes further **Official Notice** that it is old and well-known as well as common place in the information systems arts to use the number of constructs to assess the complexity or value of an information system. This is demonstrated by Smith [1,51] as shown above, Green [p.112 *inter alia*].

While Halbout, Wachtel or Ruiz do not teach that there is a 'maximum' complexity based on maximal values for the number of constructs, Smith [4,37] does and refers to a "maximum complexity factor" and in [8,38] states "the complexity factor reaches a maximum allowable value." Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Halbout, Wachtel, Ruiz and Smith in conjunction with what is old and well-known, to determine the value of software based on the usage and complexity of the information system and the technical capability existed at the time of the invention to combine these aspects and the result of the combination was predictable.

Claims 2, 17, 22, 30, 45 and 50:

Halbout does not specifically teach the following limitations, but Wachtel, in a related art, does as shown.

- *the plurality of enterprise data assets include conformed assets that conform to a general data schema that uses element group asset constructs and element asset constructs* (Wachtel [8,45-56] describes a generalized mechanism for data assimilation in accordance to business rules which corresponds to a schema for relating to particular business processes.).
- *the metadata constructs comprise instances of meta-model constructs* (Wachtel [7,2] describes metadata store which corresponds to a meta-model construct.).
- *at least one meta-model comprises a schema for relational database schemas, and wherein at least one metadata construct corresponds to a table of a relational database schema* (Wachtel [6,27] teaches an ontology designer that provides mapping between data constructs and semantic objects in a data assimilation system repository, i.e., a database.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Halbout and Wachtel to model enterprise data assessment methods based on a general scheme or plan so as to provide a measure of the system capacity (Halbout [abstract]) and hence provide methods to produce adjustments to the service evaluation (Halbout [2,5-10]) and the technical capability existed at the time of the invention to combine these aspects and the result of the combination was predictable.

Claims 3 and 31:

Halbout does not specifically teach the following limitations, but Wachtel, in a related art, does as shown.

- *the general data schema comprises a relational database schema, the element group asset constructs comprise database tables, and the element asset constructs comprise columns of database tables* (Wachtel [15,66] describes database tables and provides a way of organizing data in the ontology as shown in example databases [1,31].)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the features of Halbout with those of Wachtel and use the database table methodology as it is a common way to depict mappings and relations in an ontology and the technical capability existed at the time of the invention to combine these aspects and the result of the combination was predictable.

Claims 4 and 32:

Halbout does not specifically teach the following limitations, but Wachtel, in a related art, does as shown.

- *the general data schema comprises an XML schema, the element group asset constructs comprise XML complex types and the element asset constructs comprise XML elements* (Wachtel in at least [8,32] describes different data types and in at least [7,8] extensively describes the XML language for data typing and components of an ontology.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the features of Halbout with those of Wachtel and use the XML language as it is a common way to define data types, depict mappings and relations in an ontology and the technical capability existed at the time of the invention to combine these aspects and the result of the combination was predictable.

Art Unit: 3624

Claims 5 and 33:

Neither Halbout, nor Wachtel nor Ruiz specifically refers to cobol data types in an analogous manner as the aforementioned XML data types and constructs above (claims 4 and 32), but Examiner takes **Official Notice** that it is old and well-known as well as common place in the business management and information processing arts to employ different computer languages, particularly COBOL to specify data types and ontologies as COBOL is a well-known and widely used programming language used in business applications. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the features of Halbout with those of Wachtel and use the XML language as it is a common way to define data types, depict mappings and relations in an ontology and the technical capability existed at the time of the invention to combine these aspects and the result of the combination was predictable.

Claims 6 and 34:

Halbout does not specifically teach the following limitations, but Wachtel, in a related art, does as shown.

- *wherein the model constructs include ontology classes and properties of the ontology classes, and wherein the model constructs further include business rules that inter-relate the properties (Wachtel [abstract] teaches use of ontological models and descriptions associated with different classes of objects including workflows that shows how various rules, workflows and elements thereof inter-relate.).*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the features of Halbout with those of Wachtel and use the ontological modeling aspects of Wachtel because such modeling is a way of defining information assets and hence in view of the valuation methods of Halbout provide a means to calculate the value of information assets and the technical capability existed at the time of the invention to combine these aspects and the result of the combination was predictable.

Claims 7 and 35:

Halbout does not specifically teach the following limitations, but Wachtel, in a related art, does as shown.

- *the mapping constructs include mappings of element group asset constructs into ontology classes and further include mappings of element asset constructs into ontology properties* (Wachtel [6,27] describes "an ontology designer" that is used to map data into ontology elements, hence classes and groupings (see e.g., [5,62-67]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the features of Halbout with those of Wachtel and use the ontological modeling aspects of Wachtel because such modeling is a way of defining information assets and hence in view of the valuation methods of Halbout provide a means to calculate the value of information assets and the technical capability existed at the time of the invention to combine these aspects and the result of the combination was predictable.

15. Claims 8 – 15, 18 – 20, 23, 24, 36 – 43, 46 – 48 and 51, 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halbout et al. (US 6978257 B1) in view of Wachtel (US 6847974 B2) in view of Ruiz, et al. (*A proposal of a Software Measurement Ontology*) as applied to claims 6 and 34 above, and further in view of Venkatraman, et al. (US 7302410 B1).

Claims 8 and 36:

Neither Halbout nor Wachtel nor Ruiz specifically teach the following limitations, but Venkatraman does. Venkatraman [abstract] teaches an econometric model that uses of step functions (Venkatraman [2,66]) for costing and valuation for a plurality of products which corresponds to different classes of constructs. Venkatraman [5,49] refers to demand groups which corresponds to the plurality, associated attribute information and process time. This econometric data is then used with a base price step function (Venkatraman [2,66]) to determine value (see e.g., Venkatraman [53,18]). Venkatraman does not specifically refer to *cutoff points* or *constructs per se*, but Examiner takes **Official Notice** that it is old and well-known as well as common place in the econometric and mathematical arts that step functions typically have finite limit or cutoff points wherein the variables in question map to the specified function value. Moreover, the different types of constructs of the instant application are analogous to the different product classes, categorizations and factors and "causal variables" in Venkatramen (see e.g., [8,16]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was

Art Unit: 3624

made to combine the ontological and data modeling methods of Halbout, Wachtel and Ruiz with the econometric valuation models of Venkatraman because Venkatraman provides a method for valuing different classes of products based on demand and usage of products and categories of products which is analogous to the number of constructs. Thus, the prior art provides comparable techniques that are used to improve the valuation process and the technical ability existed to improve the valuation of information system assets where the resulting improvement was predictable.

Claims 9 and 37:

Neither Halbout nor Wachtel nor Ruiz specifically teach the following limitations, but Venkatraman does. Venkatraman [abstract] teaches an econometric model that uses of step functions (Venkatraman [2,66]) for costing and valuation for a plurality of products which corresponds to different classes of constructs and further defines the step function value as the weighted average calculated for a plurality of product classes (Venkatraman [15,33]-[16,40]). Venkatraman does not specifically refer to *cutoff points* or *constructs per se*, but Examiner takes **Official Notice** that it is old and well-known as well as common place in the econometric and mathematical arts that step functions typically have finite limit or cutoff points wherein the variables in question map to the specified function value. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the ontological and data modeling methods of Halbout, Wachtel and Ruiz with the econometric valuation models of Venkatraman because Venkatraman provides a method for valuing different classes of products based on weighted average of product classes which is analogous to the weighted average of the number of constructs. Thus, the prior art provides comparable techniques that are used to improve the valuation process and the technical ability existed to improve the valuation of information system assets where the resulting improvement was predictable.

Claims 10 and 38:

Halbout teaches the following limitations as shown.

- *the enterprise information resource management system generates results for tasks, and wherein the metric of complexity also depends on one or more of the results generated and saved*

(Halbout [3,30] describes and/or discloses "published benchmark results". Halbout [4,5-7] describes and/or discloses metrics associated with the benchmark results.).

Halbout does not specifically teach a "metric of complexity" per se, but Ruiz in an analogous art does. Ruiz [p.6] states "Base metrics: 'Lines of source code of the C component' (for measuring the size of each component) and "Number of modified lines of source code for attending to the maintenance request P" (for measuring the complexity of each maintenance request)." (emphasis added). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Halbout that pertain to the pricing of computer server service with the teachings of Ruiz pertaining to measuring complexity so that pricing of usage is accurately assessed (Halbout [1,60-67]) based on measurable attributes of software systems (Ruiz [p.1]) and that the technical capability existed at the time of the invention to combine these aspects and the result of the combination was predictable.

Claims 11 and 39:

Halbout does not specifically teach the following limitations, but Wachtel does as shown.

- *the results include data transformations* (Wachtel [9,54] refers to data fields that are translated, hence transformed).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the capability to transform data into forms that are convenient and necessary in order to produce desired results. Furthermore, Examiner takes **Official Notice** that it is old and well-known as well as common place in the information processing arts that various data types must often be transformed in the processing of desired results and that the technical capability for performing such transformations existed at the time of the invention and the resulting benefit and/or combination was predictable.

Claims 12 and 40:

Halbout does not specifically teach the following limitations, but Wachtel does as shown.

- *the results include SQL queries for data query tasks* (Wachtel in at least [16,43] describes SQL queries which are *ipso facto* for data query tasks.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the capability to transform data into forms that are convenient and necessary in order to produce desired results. Furthermore, Examiner takes **Official Notice** that it is old and well-known as well as common place in the information processing arts to use various SQL queries in the processing of desired results and that the technical capability for performing such transformations existed at the time of the invention and the resulting benefit and/or combination was predictable.

Claims 13 and 41:

Halbout does not specifically teach these limitations, but Wachtel in at least [2,31] describes use of XML for data structures and typing. Examiner takes **Official Notice** that it is old and well-known as well as common place in the data processing arts to utilize methods to translate one data type or structure into another data type or structure such as by using XSLT scripts for use with XML data and for data transformation tasks. Note also that Wachtel [16,39] refers to data translation. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the capability to transform data into forms that are convenient and necessary in order to produce desired results using XSLT scripts and that the technical capability for performing such transformations existed at the time of the invention and the resulting benefit and/or combination was predictable.

Claims 14 and 42:

Neither Halbout nor Wachtel specifically teach these limitations

- *wherein the enterprise information resource management system generates report scripts for producing reports, and wherein the metric of complexity also depends on one or more of the report scripts generated and saved,*

but Ruiz teaches methods for measuring software complexity. Ruiz p.6, for example, describes "observations" based on size such as number of lines of source code and measurement functions used for producing a metric. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made incorporate the teachings of Ruiz with those of Halbout and Wachtel and provide a measurement based on the size of reports and code associated with producing said reports so as to provide a useful measure of complexity and its use in valuation and that the technical capability for

Art Unit: 3624

performing such transformations existed at the time of the invention and the resulting benefit and/or combination was predictable.

Claims 15, 18, 43 and 46:

Halbout does not specifically teach these limitations,

- *wherein the enterprise information resource management system records metadata, and wherein the metric of complexity also depends on one or more metadata records recorded in the enterprise information resource management system,*

but Wachtel in at least [3,60] describes a metadata store, hence records metadata. Neither Halbout nor Wachtel describe use of metadata to produce a metric *per se*, but Ruiz, p.11 teaches "A Metamodel for Software Measurement" which *ipso facto* involves metadata. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made incorporate the teachings of Ruiz with those of Halbout and Wachtel and provide a measurement based on metadata so as to provide a useful measure of complexity and its use in valuation and that the technical capability for performing such transformations existed at the time of the invention and the resulting benefit and/or combination was predictable.

Claims 19 and 47:

Neither Halbout nor Wachtel describe use of a meta-model as a schema for relational database schemas including a table thereto, but Ruiz, in at least p.3 teaches a software measurement meta-model in the context of prediction systems (Ruiz, p.1) and use of data elements and information needs (p.4) hence corresponds to use of databases. Ruiz also teaches on p.4 use of database tables associated with ontology diagrams. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made incorporate the teachings of Ruiz with those of Halbout and Wachtel and provide a measurement based on metadata, meta-models and relationships to relational databases and database tables so as to provide a useful measure of complexity and its use in valuation and that the technical capability for performing such transformations existed at the time of the invention and the resulting benefit and/or combination was predictable.

Claims 20, 23, 48 and 51:

Halbout does not specifically teach these limitations, but Wachtel does. Wachtel [6,27] describes an ontology designer and in [5,51-67] teaches use of XML and semantic mapping tools ([5,63]), hence is a schema and set of rules as in [8,45] and, finally, in [6,43] refers to highly abstracted complex data, hence corresponds to a *complex element of an XML schema*. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made incorporate the teachings of Ruiz with those of Halbout and Wachtel and provide a measurement based on metadata, meta-models and XML schema so as to provide a useful measure of complexity of data and its use in valuation and that the technical

capability for performing such transformations existed at the time of the invention and the resulting benefit and/or combination was predictable.

Claims 24 and 52:

Halbout does not specifically teach these limitations, but Wachtel does. Wachtel [11,46] teaches use of a semantic descriptor and in [17,5] teaches use of a native descriptor associated with metadata, hence a meta-model construct. Examiner takes **Official Notice** that it is old and well-known as well as common place in the information systems arts to associate data descriptors with particular data assets and include them within meta-model constructs. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made incorporate the teachings of Ruiz with those of Halbout and Wachtel and provide a measurement based on metadata wherein the metadata provides descriptors of data assets. and that the technical capability for performing such transformations existed at the time of the invention and the resulting benefit and/or combination was predictable.

16. Claims 25–28, 53–56, 60, 63, 66, 69, 72 and 75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halbout et al. (US 6978257 B1) in view of Wachtel (US 6847974 B2) in view of Ruiz, et al. (*A proposal of a Software Measurement Ontology*) as applied to claims 21 and 49 above and further in view of Ruffin (US 6219654 B1).

Claims 25, 26, 53 and 54:

Neither Halbout nor Wachtel nor Ruiz specifically teach the following limitations,

- *wherein the specified additional parameters include a specified parameter equal to a number of users of the repository.*

but Ruffin, in an analogous art teaches a method for performing cost analysis of an information technology implementation that incorporates the value of the *number of users* (see Ruffin [10,45]) and the number of features (see e.g., Ruffin [4,8-12]) to compute a metric. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made incorporate the teachings of Ruffin with those of Halbout, Wachtel and Ruiz and provide a measurement based on the number of users and features of such a data repository as disclosed in Ruffin because the number of users and features is a method of determining demand, hence value, and that the technical capability for performing such

Art Unit: 3624

transformations existed at the time of the invention and the resulting benefit and/or combination was predictable.

Claims 27, 28, 55 and 56:

Neither Halbout nor Wachtel nor Ruiz nor Ruffin expressly teach *an available feature comprises an ability to change a meta-model*, but Examiner takes **Official Notice** that it is old and well-known as well as common place in the data processing arts to provide the capability to edit and modify or batch-scan any meta-data and/or meta-models associated with an information system. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made incorporate what is old and well-known with those of Halbout, Wachtel, Ruiz and Ruffin and provide metadata and metamodel modification features because they provide a means to enable and facilitate the valuation of such information under circumstances where data may need to be modified or input in large batches and that the technical capability for performing such features existed at the time of the invention and the resulting benefit and/or combination was predictable.

Claims 60, 63, 66, 69, 72 and 75:

Neither Halbout nor Wachtel specifically teach *limiting the complexity of the enterprise information resource management system to a specified limit by restricting the quantities of the asset constructs, the mapping constructs, and the model constructs*, but Ruiz p.11 teaches use of restricting values to certain specified ranges pertaining to an ontology measurement which corresponds to *limiting the complexity of enterprise information* since the ontology metric is a measure of complexity. Moreover, Examiner takes **Official Notice** that it is old and well-known as well as common place in the computational sciences to restrict values of certain variables and data so as to render computations based thereon as meaningful and to otherwise ensure data integrity. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made incorporate what is old and well-known with those of Halbout, Wachtel, Ruiz and Ruffin and provide restrictions on values associated with the numbers of constructs within an ontology model because they make such models more meaningful (Ruiz p.11) and thus provide a means to enable and facilitate the valuation of such information and that the technical capability for

performing such features existed at the time of the invention and the resulting benefit and/or combination was predictable.

17. Claims 61, 62 64, 65, 67, 68, 70, 71, 73, 74, 76 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halbout et al. (US 6978257 B1) in view of Wachtel (US 6847974 B2) in view of Ruiz, et al. (*A proposal of a Software Measurement Ontology*) as applied to claims 60, 63, 66, 69, 72 and 75 above and further in view of Raiz et al. (US 7278164 B2).

Claims 61, 64, 67, 70, 73 and 76:

Neither Halbout nor Wachtel nor Ruiz specifically teach *the specified limit is determined from a license key for the enterprise information resource management system (metadata repository)*, but Raiz, in a related art does. Raiz, in at least [8,25-35] teaches how license keys in conjunction with business rules determine the total number of users or limited validity period or with restricted functionality or capabilities. While it does not specifically relate to constructs, *per se* it is associated with groups of application program within enterprises [2,13] and database technologies ([6,Table II]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the ontological metric techniques in the combination of Halbout, Wachtel and Ruiz with the system licensing capability of Raiz because such licensing capability helps to preserve the intellectual property value of the information system (Raiz [2,66]) and that the technical capability for performing such features existed at the time of the invention and the resulting benefit and/or combination was predictable.

Claims 62, 65, 68, 71, 74 and 77:

Neither Halbout nor Wachtel nor Ruiz nor Raiz specifically teach that different incarnations of an information resource management system (metadata repository) have different specified limits, but Examiner takes **Official Notice** that it is old and well-known as well as common place in the information technology arts that such systems differ in complexity, and *ipso facto* will often have different measures of complexity, hence differing limits per the formulation in the preceding claims. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the ontological metric techniques in the combination of Halbout, Wachtel and Ruiz with the system licensing capability of Raiz because such licensing capability helps to preserve the intellectual property value of the

Art Unit: 3624

information system (Raiz [2,66]) and that the technical capability for performing such features existed at the time of the invention and the resulting benefit and/or combination was predictable.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action. Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **Mark A. Fleischer** whose telephone number is **571.270.3925**. The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **Bradley Bayat** whose telephone number is **571.272.6704** may be contacted.

The prior art made of record and not relied upon that is considered pertinent to applicant's disclosure are:

- Van Wegen, et al. "Measuring the Economic Value of Information Systems",
- Green, et al. "Applying Ontologies to Business and Systems Modelling Techniques and Perspectives: Lessons Learned",
- Rosemann, et al. "Developing a Meta Model for the Bunge-Wand-Weber Ontological Constructs"
- Eder (US PgPub 20080140549 A1),

and pertain to the use of various ontological and computer based methods for measuring complexity and using various computer technologies for the same.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair> <<http://pair-direct.uspto.gov>>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866.217.9197 (toll-free).

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

P.O. Box 1450

Alexandria, VA 22313-1450

or faxed to **571-273-8300**.

Hand delivered responses should be brought to the **United States Patent and Trademark Office Customer Service Window**:

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Alexandria, VA 22314.

Mark A. Fleischer
/Mark A Fleischer/
Examiner, Art Unit 3624 26 June 2009

/Bradley B Bayat/
Supervisory Patent Examiner, Art Unit 3624